IOP Conference Series: Materials Science and Engineering *Open Access* Volume 932, Issue 118 December 2020 Article number 012025 1st International Conference on Science, Engineering and Technology, ICSET 2020 Penang27 February 2020 Code 165916

Moisture adsorption isotherms of dried Ficus deltoidea herbal leaves

Abstract

Ficus deltoidea is a popular traditional medicine that widely used to treat various kind of diseases because of its high number of phenolic contents. In order to meet the demand of the high usage in the market, it is very important to study the behaviour of the dried herbal leaves to prolong the shelf life during storage. Hence, the study of moisture adsorption isotherm is one of the crucial parameters to minimize the deterioration of the quality. The moisture adsorption data of dried Ficus deltoidea leaves were monitored using gravimetric static method. Six different saturated salts such as potassium chloride, sodium chloride, sodium nitrate, magnesium nitrate, magnesium chloride and potassium acetate were utilized in this experiment. The equilibrium relative humidity range was setup between 23 to 86 %. Three different temperatures of 8, 30, 40 C were used as a treatment of experiment. From the final results, it is clearly claimed that the moisture adsorption isotherm data exhibited J shaped and type III of Brunauer, Emmet and Teller (BET) classification. In addition, the results of experimental data as shown that the best mathematical model fitted to Peleg model compared to GAB and Oswin models.